



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,337	04/15/2004	Baha T. Tanju	1600-09700	8644
45933	7590	11/23/2007		
CONLEY ROSE, P.C. David A. Rose PO BOX 3267 HOUSTON, TX 77253-3267			EXAMINER MAHMOUDZADEH, NIMA	
			ART UNIT 4177	PAPER NUMBER
			MAIL DATE 11/23/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/825,337

Applicant(s)

TANJU, BAH A T.

Examiner

Nima Mahmoudzadeh

Art Unit

4177

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-14, 18-21 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 7, 15-17 and 27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/28/2006 and 07/13/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 18, statement “ an amount of time that has passed since a different data stream has been forwarded does not relate to the previous limitations in this claim.
2. Claim 27 recites the limitation the "timing considerations" in line 1. There is insufficient antecedent basis for this limitation in the claim. Since “timing considerations” is introduction in claim 25, examiner assumed claim 27 depends on 25.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
4. Claims 1-3, 5,6, 10, 18-21, and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Girard (US Patent No. 4,812,840).

Regarding claim 1, Girard teaches a system, comprising:

a first master device (Fig. 1, 22);

a second master device (Fig. 1, 20);

a redundancy manager coupled to the first and second master devices (Fig. 1, 10); and

a slave device coupled to the redundancy manager (Fig. 1, 28),

wherein the redundancy manager is operable to receive a first data stream from the first master device and a second data stream from the second master device (Column 3, lines 16-21), and

wherein the redundancy manager is operable to selectively forward one of the first and second data streams to the slave device according to a prioritization of factors calculated to optimize an amount of valid communication to the slave device (Column 3, lines 7-9 and lines 21-26).

Regarding claim 2, Girard teaches the system of claim 1 wherein the first and second master devices comprise computers that are not configured to share data associated with the slave device directly with each other (In Fig. 1, the primary and back-up controller are not configured to communicate directly with each other).

Regarding claim 3, Girard teaches the system of claim 1 wherein the first and second master devices are in different locations such that a user having access to the first master device is not able to simultaneously access the second master device and vice versa (In Fig. 1, both master devices are independent and separate from each other. Also, a slave device cannot communicate to both at the same time).

Regarding claim 5, Girard teaches the system of claim 1 wherein the factors calculated to optimize an amount of valid communication to the slave device comprise a validity estimation of the first data stream, a validity estimation of the second data stream, mastership transfer commands from the first and second master devices, and timing considerations (In column 3, lines 26-33 as soon as interruption is applied, the non-priority data is not going to be valid any more).

Regarding claim 6, Girard teaches the system of claim 5 wherein the first and second master devices are configured to send the mastership transfer commands to the redundancy manager in response to user intervention and at least one of data content received from the slave data and a lack of data received from the slave device (Column 3, lines 7-9 and lines 21-26 and column 8, lines 16-30).

Regarding claim 10, Girard teaches a redundancy manager device for providing redundant data communication to a slave device, the redundancy manager device comprising:

a first processor (Fig. 2, 32) ; and

a switching mechanism coupled to the first processor (Fig. 2, 30),

wherein the switching mechanism is configured to receive a first data stream associated with a first master device and a second data stream associated with a second master device (Fig.1),

wherein the switching mechanism is configured to implement a default configuration whereby one of the first and second data streams is forwarded to the slave device (Fig.1),

wherein the first processor is configured to provide a switch control signal that causes the switching mechanism to switch between forwarding the first data stream and forwarding the second data stream (Fig. 2, 32),

wherein the first processor asserts and de-asserts the switch control signal in response to a determination of first and second data stream validity, mastership transfer commands associated with the first and second master devices, and timing considerations (Column 3, lines 16-33).

Regarding claim 18, Girard teaches a method, comprising:

receiving a plurality of data streams (Fig. 2, 16 and 18); and forwarding one of the data streams according to a prioritization of data stream validity, requests to forward a particular data stream, and an amount of time that has passed since a different data stream has been forwarded (It is inherent that when priority request is received within in certain time interruption will be applied by control logic. Column 3, lines 16-33).

Regarding claim 19, Girard teaches the method of claim 18 further comprising cycling between forwarding the data streams if a determination is made that none of the data streams are valid (Column 3, lines 7-9 and lines 21-26).

Regarding claim 20, Girard teaches the method of claim 19 further comprising detecting when a data stream becomes valid and setting a relay to forward the valid data stream (Column 3, lines 7-9, lines 21-26 and Fig. 1).

Regarding claim 21, Girard teaches the method of claim 20 further comprising upon receiving a request to forward a particular data stream determining if the particular data stream is associated with a healthy master device (Column 8, lines 16-22).

Regarding claim 24, Girard teaches a system, comprising:

a first master device (Fig. 1, 22);

a second master device (Fig. 1, 20);

a slave device responsive to commands received from the first and second master devices (Column 3, lines 16-33);

means for switching mastership of the slave device coupled between the master devices and the slave device (Fig. 1, switch-10); and

means for controlling coupled to the means for switching mastership (Fig. 2, 32), wherein the means for controlling asserts and de-asserts a signal to control the means for switching mastership based on a prioritization of factors calculated to optimize an amount of valid communication to the slave device (Fig. 2, 30 and 32).

Regarding claim 25, Girard teaches the system of claim 24 wherein the factors calculated to optimize an amount of valid communication to the slave device comprise a

validity estimation of the data streams from the first and second master devices (Control information mentioned on column 2, lines 51-68), requests to transfer mastership by the first and second master devices, and timing considerations (Column 3, lines 1-33).

Regarding claim 26, Girard teaches the system of claim 24 wherein the first and second master devices are configured to send requests to transfer mastership in response to user input and at least one of data content received from the slave data and a lack of data received from the slave device (Column 3, lines 7-9 and lines 21-26 and column 8, lines 16-30).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Girard (US Patent No. 4,812,840) in view of Dickie et al. (US Patent No. 5,587,707).

Regarding claim 4, Girard teaches the system of claim 1, but fails to teach wherein the slave device comprises a subsea tool. However, Dickie et al. teach wherein the slave device comprises a subsea tool (Fig. 3, 15A).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to add subsea level tool to system taught by Girard to be able to have uninterrupted communication between surface and slave equipments.

7. Claims 8 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Girard (US Patent No. 4,812,840) in view of Morimoto et al. (European Patent Application No. EP0545001)

Regarding claim 8, Girard teaches the system of claim 1 but fails to teach a second redundancy manager coupled to the first master device, the second master device and the slave device, wherein the second redundancy manager is operable to receive the first and second data streams and forward one of the first and second data streams to the slave device via a second communication path that is separate from a first communication path used to transmit data from the first redundancy manager to the slave device. However, Morimoto et al. teach a second redundancy manager coupled to the first master device, the second master device and the slave device, wherein the second redundancy manager is operable to receive the first and second data streams and forward one of the first and second data streams to the slave device via a second communication path that is separate from a first communication path used to transmit data from the first redundancy manager to the slave device (Fig. 1, C0 and C1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a second redundancy manager to the system taught by Girard in order to communicate with the slave device utilizing the first and second redundancy manager.

Regarding claim 11, Girard teaches the redundancy manager device of claim 10 but fails to teach a redundancy manager further comprising a second processor, wherein the second processor is configured to determine the second data stream

validity and assert a health signal to the first processor when the second data stream is invalid. However, Morimoto et al. teach a redundancy manager further comprising a second processor, wherein the second processor is configured to determine the second data stream validity and assert a health signal to the first processor when the second data stream is invalid (It is inherent that having second processing unit speeds up the process that was done before by only one CPU. Page 6 lines 12-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a second processor taught by Morimoto et al. to redundancy manager in order to determine the second data stream validity and assert a health signal to the first processor.

Regarding claim 12, Girard teaches the redundancy manager device of claim 11 but fails to teach wherein the second processor is further configured to assert a first mastership transfer signal to the first processor in response to a mastership transfer command associated with transferring mastership from the first master device to the second master device. However, Morimoto et al. teach wherein the second processor is further configured to assert a first mastership transfer signal to the first processor in response to a mastership transfer command associated with transferring mastership from the first master device to the second master device (Interruption signal can be a membership transfer signal explained in column 3, lines 16-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second processor to device taught by Girard to determine second data stream validity and assert health signal to the first processor.

Regarding claim 13, Girard teaches the redundancy manager device of claim 12 wherein the second processor is further configured to assert a second mastership transfer signal to the first processor in response to a mastership transfer command associated with transferring mastership from the second master device to the first master device (Interruption signal can be a membership transfer signal explained in column 3, lines 16-33).

Regarding claim 14, Girard teaches the redundancy manager device of claim 13 wherein the first processor is configured to determine if the first data stream is invalid and to periodically determine an assertion state of the health signal, first mastership transfer signal, and the second mastership transfer signal (In column 3, lines 29-33 at any time a priority signal is received the control is going to switch from one device to the device with priority).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Girard (US Patent No. 4,812,840) in view of Morimoto et al. (European Patent Application No. EP0545001) and further in view of Dickie et al. (US Patent No. 5,587,707)

Regarding claim 9, Girard in view of Morimoto et al. teach the system of claim 8 but fails to teach the slave device comprises a redundant subsea tool that is configured to receive data from both the first communication path and the second communication

path, wherein the redundant subsea tool comprises redundant sensors and redundant controllers and wherein each sensor and controller is operable to perform a function according to data received from at least one of the first and second communication paths. However, Dickie et al. teach the slave device comprises a redundant subsea tool (Fig. 3, 15A) that is configured to receive data from both the first communication path and the second communication path, wherein the redundant subsea tool comprises redundant sensors and redundant controllers and wherein each sensor and controller is operable to perform a function according to data received from at least one of the first and second communication paths. (Fig. 6)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the slave device taught by Girard in view of Morimoto et al. to perform as subsea tool with redundancy capabilities to increase the precision of data transmitted to surface.

Allowable Subject Matter

9. Claims 7,15-17 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 7 and 27, Girard (US Patent No. 4,812,840) teaches a multiple mode switching means. However, prior art of record fail to teach or render obvious, alone or in combination, the timing consideration which prevents switching back and

Art Unit: 4177

forth between first and second adapt stream if less than a threshold amount of time has passed as claimed in dependent claims 7 and 27 in combination with all limitations in respective independent claims and their intervening claims.

Regarding claims 15-17, Girard (US Patent No. 4,812,840) in view of Morimoto et al. (EP 0545001) teach multiple mode switching means and failure detection in a redundant duplex system. However, prior art of record fail to teach or render obvious, alone or in combination, wherein the first processor is configured to periodically assert a reset signal to the second processor whereby the second processor resets the health signal, the first mastership transfer signal, and the second mastership transfer signal as claimed in dependent claim 15 in combination with all limitations in the independent claim 10 and its intervening claims.

Conclusion

11. Any responses to this Office Action should be **faxed** to (571) 273-8300 or **mailed** to:

Commissioner for Patent
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nima Mahmoudzadeh whose telephone number is (571)

Art Unit: 4177

270-3527. The examiner can normally be reached on Monday - Friday 7:30am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Q. Tieu can be reached on (571) 272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nima Mahmoudzadeh
AU 4177

/Benny Q Tieu/
Supervisory Patent Examiner, Art Unit 4177